

**WHAT IS CLAIMED IS:**

1. A flat panel for a cathode ray tube comprising:

an outer surface formed flat; and

an inner surface formed non-spherically,

5 wherein the non-spherically formed inner surface satisfies formula 1 for preventing a screen image from being shown concavely by a user at a distance apart from a valid screen width size,

$$y_2 \leq y_1 \dots\dots\dots \text{formula 1}$$

wherein  $y_1$  represents a vertical distance between the outer surface

10 and a refracted screen image on a central axis of the panel, and  $y_2$  represents a vertical distance between the outer surface apart from the central axis of the panel and the refracted screen image.

2. A flat panel for a cathode ray tube as claimed in claim 1, wherein the panel has a high transmission ratio of 60% or more for preventing  
15 degradation of luminance due to a difference of thickness between a central part and an environmental part.

3. In a cathode ray tube comprising a funnel having a neck part and an opening part, an electron gun provided at a front end portion of the neck part in the funnel for emitting electron beams, a deflection yoke for  
20 deflecting the electron beams emitted from the electron gun, a shadow mask for discriminating the electron beams deflected by the deflection yoke, and a panel coupled in the opening part of the funnel and provided with a phosphor surface inside for realizing a screen image by the electron beams

discriminated by the shadow mask, the panel comprising:

an outer surface formed flat; and

an inner surface formed non-spherically,

wherein the non-spherically formed inner surface satisfies formula 1

5 for preventing a screen image from being shown concavely by a user at a distance apart from a valid screen width size,

$$y_2 \leq y_1 \dots\dots\dots \text{formula 1}$$

wherein  $y_1$  represents a vertical distance between the outer surface and a refracted screen image on a central axis of the panel, and  $y_2$

10 represents a vertical distance between the outer surface apart from the central axis of the panel and the refracted screen image.

4. A flat panel for a cathode ray tube as claimed in claim 3, wherein the panel has a high transmission ratio of 60% or more for preventing degradation of luminance due to a difference of thickness between a

15 central part and environmental part.